Abstracts

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Management of mixed arterial and venous leg ulcers

Humphreys ML, Stewart AR, Gohel MS, et al. Brit J Surg 2007;94:1104-7.

Conclusion: Good healing rates can be obtained for ulcerated extremities with combined arterial and venous disease using a protocol of selective revascularization combined with supervised moderate compression.

Summary: During a 6-year period, 2011 ulcerated legs were seen in a specialized leg ulcer clinic. Of these extremities, 1416 (70.4%) had venous reflux. Legs without arterial disease, defined as an ankle-brachial index (ABI) >0.85, were treated with multilayer compression bandages. Patients with severe arterial disease, defined as an ABI ≤0.5, were considered for urgent revascularization. Those with moderate ischemia (ABI 0.5 to 0.85) underwent supervised moderate compression and revascularization if their ulcer did not heal. Healing rates for each group were determined using life-table analysis.

Of the 1416 patients with venous reflux, arterial disease was moderate in 193 (13.6%) and severe in 31 (2.2%). At 36 weeks, healing rates for legs with insignificant, moderate, and severe arterial disease were 87%, 68% and 53%, respectively ($P < .001$). There were 32 legs that were revascularized; arterial disease was moderate in 17 and severe in 15. Healing occurred ≤36 weeks in four of the 17 legs with moderate disease and in seven of the 15 legs with severe arterial disease ($P = .270$). The 30-day mortality for revascularization was 6.5%.

Comment: The study indicates that in patients with mixed arterial and venous ulcers who have moderate arterial disease, reasonable healing rates can be achieved without revascularization of the extremity. The healing rates in the revascularized extremities certainly were not so impressive that this data can be used to justify a policy of aggressive revascularization in patients with ulcers and combined venous and moderate arterial disease. A trial of conservative management using modified compressive therapy seems reasonable in patients with ulcers and moderate arterial disease and venous ulcer.

Degree of fusiform dilatation of the proximal descending aorta in type B acute aortic dissection can predict late aortic events

Marui A, Mochizuki T, Koyama T, et al. J Thorac Cardiovasc Surg 2007; 134:1163-70.

Conclusion: Aortic diameter, a patent false lumen, and fusiform dilatation of the proximal descending aorta predict late aortic events in patients with acute type B aortic dissection.

Summary: Most type B aortic dissections can be acutely managed medically. Some, however, eventually require surgical intervention. There is current intense interest in trying to predict which patients with acute type B dissection will require intervention, with the thought that perhaps such patients should be treated early with stent graft repair of their dissection. In this study, the authors investigated whether an index that expresses the degree of fusiform dilatation of the proximal descending aorta can predict late aortic events in patients with acute type B aortic dissection.

A retrospective analysis was done of 141 patients with acute type B dissection, without initial complications, to determine predictors of late aortic events. Aortic events were defined as aortic dilatation, rupture, organ ischemia, rapid enlargement of ulcer-like lesions, and refractory pain. An aortic fusiform dilatation index was calculated using the formula: (maximum diameter of the proximal descending aorta/the diameter of the distal aortic arch) + the diameter of the descending aorta at the level of the pulmonary artery.

In patients with late aortic events, the fusiform index was 0.59 vs 0.53 in patients without late aortic events ($P < .01$). Most patients with a higher fusiform index exhibited aortic dilatation earlier than those with a lower fusiform index. By multivariate analysis, independent risk factors of aortic events were a maximum aortic diameter ≥40 mm, a fusiform index ≥0.64, and a patent false lumen, with hazard ratios of 3.18, 2.73, and 2.64, respectively. For patients with all three predictors, the values of actuarial freedom from aortic events at 1, 5, and 10 years were 22%, 17%, and 8%, respectively. In patients with none of these predictors, actuarial freedom from aortic events was 97%, 94%, and 90% at 1, 5, and 10, years.

Comment: This is another of a number of recent articles trying to predict which patients with type B aortic dissection are most likely to require surgical intervention. It is very clear that most patients with type B aortic dissection are well managed medically. These data should be of interest to those planning intervention trials for acute type B aortic dissection. A positive result favoring intervention is more likely if the correct patients are studied.

Small is beautiful: Why profundaplasty should not be forgotten

Savolainen H, Hansen A, Diehm N, et al. World J Surg 2007;31:2048-61.

Conclusion: Profundaplasty is a valuable option in claudication patients with superficial femoral artery occlusion and occlusive disease of the common femoral and profunda femoris arteries. It is not useful in patients with tissue loss.

Summary: The authors sought to evaluate the utility of profundaplasty in the modern management of vascular surgical patients. From January 2000 through December 2003, 97 patients (106 legs) underwent profundoplasty at the authors' institution in Switzerland. The superficial femoral artery was occluded in 55 legs, and these patients (75% men) were included in the analysis. Their mean age was 71 years and 35% had diabetes. The indication for profundaplasty was claudication in 29 (52%) and critical leg ischemia (CLI) in 26 (47%), either with rest pain in 17 (31%) or ulcers/gangrene in 9 (16%).

The operation used standard endarterectomy techniques with a bovine pericardium patch. Mean follow-up was 33 months. The mean preoperative ankle-branchial index (ABI) was 0.6. Clinical efficacy was defined as an increase of one or more Rutherford categories without repeat limb revascularization or amputation. Mortality and other morbidity were also analyzed.

The postoperative ABI significantly improved, as defined by an increase of >0.15, in 24 (44%) of the patients. Cumulative clinical success, as defined above, was 80% at 3 years. Patients with claudication had better outcomes than those with CLI ($P = .04$). Two minor amputations and two major amputations were performed, all in patients with CLI. No ulcer healing occurred in the nine patients with ulcers.

Comment: The study obviously has some significant drawbacks in that the benefit in the patients with claudication was not defined by any functional assessment. In the days of endovascular recanalization of the superficial femoral artery, it is doubtful isolated profundaplasty will be performed very often for claudication. Perhaps the most important message here is to reiterate that profundaplasty alone is seldom going to be adequate therapy for CLI associated with tissue loss.

Glycemic control, lipid-lowering treatment, and prognosis in diabetic patients with peripheral atherosclerotic disease

Feringa HH, Karagiannis FE, Vidakovic R, et al. Ann Vasc Surg 2007;21: 780-9.

Conclusion: Serial hemoglobin (Hb) A_{1C} measurements improve risk stratification in patients with peripheral arterial disease (PAD) and diabetes. Desirable glycemic control is associated with statin therapy. Statin therapy is also associated with improved long-term outcome.

Summary: Intensive blood glucose control in patients with diabetes attenuates many complications associated with dysglycemia. Glycosylated HbA_{1C} measurements reflect long-term glucose control and may improve risk stratification for patients with PAD and diabetes. The authors sought to determine prognostic values of repeated HbA_{1C} measurements, ankle-brachial index (ABI) values, and if the use of long-term statins was associated with improved glycemic control and outcome.

This was an observational cohort study of 525 consecutive diabetic patients with PAD. Serial HbA_{1C} levels and ABI values were obtained. Use of long-term statin therapy was also determined. Median follow-up was 7 years. All-cause mortality was 37%, and cardiac death occurred in 22%. Both decreases in HbA_{1C} and HbA_{1C} variability independently predicted outcome. Decreases in ABI also predicted outcome. Patients receiving long-term statin therapy were more likely to have decreased HbA_{1C} values (hazard ratio [HR], 1.86, 95% confidence interval [CI], 1.27-2.74) and HbA_{1C} values <7% (HR, 2.58; 95% CI, 1.49-4.48). Long-term statin use was also associated with lower all-cause mortality (HR, 0.39; 95% CI, 0.26-0.61) and was significantly associated with a decreased risk of cardiac death (HR, 0.040; 95% CI, 0.24-0.76).

Comment: This study adds to several others in the literature that suggest beneficial features of statins regarding insulin secretion, insulin sensitivity, and insulin-mediated glucose uptake in both patients with and without diabetes (Am J Card 2006;98:66-69 and Atherosclerosis 2000; 150:121-127). Improved glycemic control may be one of the pleiotropic affects of statins that benefit patients with PAD independent of cholesterol level.